

REMARKS

In the Office Action, the Examiner again rejected claims 1-38 pursuant to 35 U.S.C. § 101 as directed to non-statutory subject matter. Applicants previously amended independent claims 1 and 25 by adding "a device." The Examiner again rejected the claims, noting that the recited steps could be performed in the mind of a user or by use of a pencil and paper. The Examiner also noted that "nothing in the body of the claims recites any structure or functionality to suggest that a computer performs the recited steps."

Independent claim 1 has been amended to clarify without narrowing that "a computer" performs the analyzing. Extracting billing information is concrete, useful and tangible. Billing information is very important to medical facilities, so automatically extracting billing information as a function of analysis with a computer, such as a microprocessor, may be very useful for hospitals or others. Independent claim 1 is directed to statutory subject matter in the technological arts.

Independent claim 25 is not further amended. The claim is a system claim with a knowledge base and an engine of a device. The system is not provided by a persons mind or by use of a pencil and paper. A pencil and paper do not have an engine that automatically extracts by analyzing. The "engine of a device that automatically extracts . . . by analyzing" clearly recites structure and functionality suggesting a computer, processor or other device that implements an engine performing extraction and analysis. Claim 25 claims an engine of a device for automatically extracting billing information, providing concrete, useful and tangible results, not an abstract idea. Independent claim 25 is directed to statutory subject matter in the technological arts.

Claims 1-42 were rejected pursuant to 35 U.S.C. § 103(a) as unpatentable over Evans (U.S. Patent No. 6,347,329) in view of Harvin et al. (Managed Care: New Financial Practice/Strategies . . .) and further in view of Hunt et al. (U.S. Patent No. 5,933,809). Applicants respectfully request reconsideration of the rejection of claims 1-42, including independent claims 1, 25 and 39.

Independent claim 1 claims obtaining a medical record comprising structured and unstructured data, analyzing at least the unstructured data with a computer and automatically extracting billing information as a function of the analysis. As noted by the Examiner, Evans and Harvin et al. do not disclose "with a device" "from at least the unstructured data source" and "automatically extracting billing information from the medical record as part of the analysis." Instead, the Examiner alleges these features to be known in the art as evidenced by newly cited Hunt et al.

Hunt et al. perform information processing on pre-existing medical billing record information (abstract and col. 2, lines 46-51). The input medical billing information is stored in a pre-existing database in any universally computer-readable format, such as ASCII text, ECIDIC, dBase, FoxPro, Lotus or Microsoft ACCESS or Excel (col. 4, lines 17-27). Like Evans and Harvin et al., the input medical billing information of Hunt et al. is structured. Before processing, the processor reads the Medicare Remittance Advice (RA) billing record information (col. 4, lines 51-57). Hunt et al. note "the input billing records are sorted by inpatient or outpatient data type by first examining the initial character of the individual data string representing each input billing record. If the initial character of the input data string is not a binary coded "1" it is a record that does not contain inpatient or outpatient data. The sorting program next searches for an ASCII-coded "A" or "B" in the input data string. If an "A" is found the input data string is stored in its own separate file in the inpatient billing record database. If a "B" is found the data string is stored in its own separate file in the outpatient billing record database" (col. 5, lines 11-22). The fact that the input records have specific codes in specific spots shows that the input data is structured.

The indication of structured input data is reinforced in the next paragraph where Hunt et al. note "each input billing record is converted by breaking up the data string representing the billing record into individual segments of predetermined length that each correspond to a specific piece of information about the individual patient for whom the billing record was created, such as the patient's identification, the payment amount received or refunded by the medical service provider, the intermediary insurance or coinsurance provider, and any amounts of coinsurance or deductibles applicable to that individual patient for the service billed. The patient identification code is unique to each

individual billed patient and can be the social security number of the individual patient or a Medicare insurance tracking number. The payment amount segment contains a separate hexadecimal coded character in its last byte for determining whether a payment was received by the medical service provider or refunded by the service provider to a receiving party. The hexadecimal coded letters "A" through "I" (which respectively represent the decimal digits 0 through 9) indicate that a payment was received by the medical service provider. The hexadecimal letters "J" through "R" (which again respectively represent the decimal digits 0 through 9) indicate that a payment was refunded by the medical service provider. A neighboring data string segment will indicate the receiving party of the refund. The software is programmed to look for each data string segment by its predetermined length and in the order the segment appears in the data string as it processes each input billing record for storage in the processed medical billing record storage medium 4" (col. 5, lines 31-59). Each piece of information is a fixed length, is found in a particular order, has a particular code associated with it, and corresponds to a specific piece of information. The input data is structured, not unstructured as claimed in claim 1. Hunt et al. disclose the analysis of patient information from structured data, not unstructured data. Like Evans and Harvin et al., Hunt et al. do not disclose analyzing with a computer the patient information from at least the unstructured data source.

Independent claim 25 claims an engine of a device that analyzes structured and unstructured data as a function of domain specific criteria and extracts billing information as a function of the analysis.

As discussed above for claim 1, Evans and Harvin et al. disclose point-of-care data collection, but not suggest analysis by a device of unstructured data. Hunt et al. input and analyze structured data, not structured and unstructured data.

Independent claim 39 claims instructions for a program implemented on a machine for analyzing unstructured data. As discussed above for claims 1 and 25, Evans, Harvin et al. and Hunt et al. do not suggest this limitation.

Dependent claims 2-24, 26-38 and 40-42 depend from the independent claims discussed above, so are allowable for the same reasons. Further limitations of the dependent claims distinguish from the cited references. The examples below deal with the citation relied on by the Examiner.

Claims 5 and 42 claim extracting all codes supported by patient information based on all domain-specific criteria. The Examiner alleges that Evans teaches such a feature in column 8, line 66 to column 9, line 19. This cited section shows a data table with a physician's ICD9 diagnosis codes and CPT procedure codes. A physician's codes are provided. However, there is no suggestion to extract all codes supported by patient information based on all domain-specific criteria. A physician's codes are not all codes supported.

Claims 6 and 7 claim institution-specific domain knowledge used for analysis by a computer. The Examiner alleges that Evans teaches such a feature in column 5, lines 2-33. This cited section shows patient data (col. 5, lines 6-26) and a reference data base (col. 5, lines 26-30). The claimed institution-specific domain knowledge is used for analysis of patient information. The patient data may be gathered at an institution, but is not domain knowledge used for analysis by a computer. The reference data base assists the healthcare provider, but is not domain knowledge used for analysis by a computer.

Claims 8 and 9 claim condition or disease specific knowledge used for analysis of patient data by a computer. The Examiner alleges that Evans teaches such a feature in column 5, line 54-column 6, line 14. This cited section shows use of the system to enter data, such as prescriptions, treatments or appointments. Physician entering diagnosis or disease related information is not using condition or disease specific knowledge for analysis of patient data by a computer.

Claims 10, 11, 24, 28 and 29 claim an explanation with a pointer to information supporting the extracted billing information. The Examiner alleges that PR Newswire teaches such a feature in page 1, paragraphs 4-5. The Examiner did not rely on PR Newswire in the general rejection paragraph. Also, the cited section of PR Newswire shows providing a sequence of medical choices and diagnoses codes, but does not suggest a pointer to information supporting extracted billing information. Furthermore, the PR Newswire notes the listing of symptoms most commonly associated with each

diagnosis for chart development, but also notes the system is not a diagnostic tool. The PR Newswire provides charting by the physician with a list of diagnosis codes and associated symptoms, not a pointer to information supporting extracted billing information.

Claims 12, 13, 14, 30 and 31 claim automatically generating a medical claim for the patient using the extracted billing information. The Examiner alleges that PR Newswire teaches such a feature at page 1, paragraphs 4-5. The cited section of PR Newswire provide for charting and selection of billing codes, not automated generation of a medical claim from extracted billing information.

Claims 15, 16, 17, 32, 33 and 34 claim automatic updating using the extracted billing information. Harvin et al. collect the information at the point-of-care (page 4, paragraph 4). Billing forms are simultaneously generated with an original transaction (page 3, paragraph 3), but there is no suggestion to automatically update the record with extracted billing information.

Claims 18, 19, 20, 35 and 36 claim automatic assessment of the quality of information of the medical record using the extracted billing information. Harvin et al. assume the medical record data is accurate (page 5, paragraphs 4 and 6).

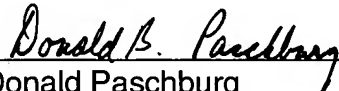
Claims 21, 22, 23 and 37 claim automatically determining an expected amount of reimbursement. Harvin et al. note case tracking (page 2, paragraph 7) and the importance of identifying profitability (page 4, paragraph 1). Harvin et al. relies on data entry to assist these goals, not on any determination of an expected amount of reimbursement.

Enclosed with this Response is an Applicant Initiated Interview Request Form (PTO 413-A). In a telephone conversation between Craig Summerfield (Reg. No. 37,947), Examiner Frenel and Supervisor Thomas on June 1, the Examiner agreed to contact Applicants before issuing a next Office Action unless an allowance would be issued. Please contact Craig Summerfield at (312) 321-4726 to discuss any further rejection or objections to the claims prior to issuing a further substantive non-allowance Office Action.

CONCLUSION

Applicants respectfully submit that all of the pending claims are in condition for allowance and seeks early allowance thereof. If for any reason, the Examiner is unable to allow the application but believes that an interview would be helpful to resolve any issues, he is respectfully requested to call the undersigned at (732) 321-3191 or Craig Summerfield at (312) 321-4726.

Respectfully submitted,


Donald Paschburg
Registration No. 33,753
Attorney for Applicants

Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
Iselin, N.J. 08830
(732) 321-3191
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